mentary canal of the imago during the post-embryonal development induce us, first of all, to reflect on the question, What transformation does the entoderm of insects which undergo the so-called complete metamorphosis pass through from the very beginning of the life of such insects? For the solution of the question how many times the entoderm of such insects is changed, science unfortunately does not as yet possess sufficient data concerning the development of the entoderm during their embryonal development.

"If the supposition of some investigators, who look upon the abdominal depression very early visible in the blastoderm of *Hydrophilus*, *Apis*, etc., as a stomach (*gastrula*), proves to be correct, and if, secondly, my observations are verified, that, notwithstanding the presence of this provisional entoderm (*gastrula*), the final epithelium of the median intestine of the embryo may develop anew with the help of the epithelium of the anterior and posterior intestine, then we will be able to affirm with assurance that the imago of insects with a complete metamorphosis has a *tertiary* entoderm. On the contrary, if it become established as a scientific fact, that the stomach (*gastrula*) of insects is transformed directly into the entoderm of the median intestine of the larval embryo, then the entoderm of the imago of the above-indicated insects should be called *secondary*. There is a considerable array of facts in favor of both of these suppositions, but in order to obtain a final solution of this important morphological question, we must wait for more numerous observations on the development of the entoderm during the embryonal and post-embryonal periods.[1]

"As to the anterior and posterior intestine, it seems very probable that these portions of the alimentary canal of the imago of insects which have a complete metamorphosis are *secondary* formations."

Recent Books and Pamphlets. — On the Fishes of Northern Indiana. By D. S. Jordan. On the Genera of North American Fresh-Water Fishes. By David S. Jordan and Charles S. Gilbert. (From Proceedings of the Academy of Natural Sciences, Philadelphia.) 8vo, pp. 104.

Die Wanderheuschercke (Œdipoda migratoria Linn). Gemeinverständliche Darstellung ihrer Naturgeschichte, Lebensweise, Schädlichkeit, und der Mittel zu ihrer Vertilgung. Von Dr. A. Gerstäcker. Berlin. 1876. 8vo, pp. 67. Two colored plates.

Catalogue of the Lepidoptera of America North of Mexico. Part I. Diurnals. By William H. Edwards. Philadelphia, Pa. 1877. 8vo, pp. 68.

Antigeny, or Sexual Dimorphism in Butterflies. (From the Proceedings of the American Academy of Arts and Sciences, xii. 1877.) 8vo, pp. 8.

Bulletin of the United States Entomological Commission. No. 2. On the Natural History of the Rocky Mountain Locust, and on the Habits of the Young or Un-

[1] Paul Mayer, in his Ontogeny and Phylogeny of Insects, speaks of the gastrula-stomach of the embryo of *Platygaster*, without noticing that this stomach is simply a fold of the body of the embryo, separating its cephalic and caudal haloes. The embryo of *Platygaster* is a highly convenient object for observation, and I can say with assurance that in this case the primary entoderm is not formed through the invagination of the exoderm.

fledged Insects as they occur in the More Fertile Country in which they will hatch the Present Year. Washington, May, 1877. 8vo, pp. 15.

The Westminster Review on The Recent Origin of Man. By James C. Southall. (Extracted from the Methodist Quarterly Review for April, 1877.) 8vo, pp. 25.

Gar-Pikes, Old and Young. By Prof. B. G. Wilder. (Reprinted from the Popular Science Monthly, May and June, 1877.) 8vo, pp. 22.

The Growth of Children. By H. P. Bowditch, M. D. (From the Eighth Annual Report of the State Board of Health of Massachusetts. Boston. 1877. 8vo, pp. 51.

Annual Report of the Trustees of the Museum of Comparative Zoölogy for 1876. Boston. 1877. 8vo, pp. 47.

GENERAL NOTES.

BOTANY.[1]

ORCHIS ROTUNDIFOLIA Pursh. — This, after all, is the proper name for this rare species, which is likely to be more common, now that Mr. Pringle has found new stations in Vermont, where it abounds. From live plants sent by Mr. Pringle to our Botanic Garden, the plant is now in blossom, and an examination of the fresh flowers reveals the fact that the plant is a genuine *Orchis*, having the glands in a pouch. In fact, it is a true congener of *O. spectabilis*, but with lateral petals spreading in the manner of most European species. It was Richardson who first referred this *Orchis* to *Habenaria*, and as he was aided by Robert Brown in the preparation of his Botanical Appendix to Franklin's Journey, one felt confident that all was right. Let our young botanists note from this how much is to be done, if they will but use their eyes. — A. GRAY.

THREE-FLOWERED SANGUINARIA. — From Galva, Illinois, H. W. Young sends a scape of *Sanguinaria Canadensis* which, besides the terminal flower, bears a pair of similar lateral flowers, one on each side, at some distance below, apparently without subtending bracts; an interesting and novel monstrosity. — A. GRAY.

TWO-FLOWERED ARETHUSA. — I found near here two days ago a remarkable specimen of *Arethusa bulbosa*, L. It was in a place where this species is not uncommon, but I have never seen so fine a specimen. There were two distinct scapes from the same bulb, one bearing a single flower, and the other a pair of flowers, all perfect and unusually fine ones. The scapes were not longer than is usual, but quite stout and healthy. — H. M. DENSLOW, New Haven, June 1, 1877.

In a package of several hundred fine specimens of *Arethusa*, just received from Plymouth, Mr. B. M. Watson has observed two interesting monstrosities. One of the specimens consists of a two-flowered scape, with the flowers complete and united at the base; the other has the flowers, which are both incomplete, united through nearly the whole length.

[1] Conducted by PROF. G. L. GOODALE.